

## REMARKS

### *The Pending Claims*

Claims 1-15 are pending currently, and claims 16-18 are newly added herein. Claims 1-4 are directed to a preparation process for a first aqueous dispersion comprising an ex-situ photosensitive silver halide and a substantially light-insensitive silver salt of an organic carboxylic acid. Claims 5-6 are directed to a first aqueous dispersion. Claim 7 is directed to a process for preparing a layer of a photo-addressable thermally developable element of a photothermographic recording material. Claims 8-10 are directed to a preparation process for a fourth aqueous dispersion comprising a second in-situ photosensitive silver halide and a substantially light-insensitive silver salt of an organic carboxylic acid. Claims 11-12 are directed to a fourth aqueous dispersion. Claim 13 is directed to a process for preparing a layer of a photo-addressable thermally developable element of a photothermographic material. Claims 14 and 15 are each directed to a photothermographic recording material. Claim 16 is directed to a photothermographic recording material comprising a photoaddressable thermally developable element.

### *The Amendments to the Claims*

The claims have been amended to point out more particularly and claim more distinctly the subject matter of the invention. In particular, claims 1 and 8 have been amended to recite "wherein" in lieu of "characterized in that." Moreover, claims 14 and 15 have been amended to recite the step of raising the pH of the aqueous dispersion to a pH of at least 8.0. Claim 16 has been added to claim photothermographic recording materials in accordance with the present invention. Claims 17 and 18 have been added, depending from claims 1 and 8, respectively. Support for the newly added claims can be found at page 10, line 32 to page 11, line 34; page 15, line 30 to page 16, line 4; and page 21, line 1 to page 22, line 36. No new matter has been added by way of these amendments. Separate documents setting forth (a) the precise changes to the claims, as well as (b) the text of all of the pending claims, are enclosed herewith.

*Summary of Office Action*

The Office Action rejects claims 5-6 and 14 under 35 U.S.C. § 102(b) as allegedly anticipated by, or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Gilliams et al. (i.e., U.S. Patent 5,891,616) (hereinafter "Gilliams"). Further, claims 8, 10, 11 and 15 are rejected under 35 U.S.C. § 102 (b) as allegedly anticipated by Gilliams. The Office Action also rejects claims 9, 12 and 13 under 35 U.S.C. § 103 (a) as allegedly unpatentable over Gilliams. Finally, Applicants acknowledge, with appreciation, the indication that claims 1-4 and 7 are allowable.

*Discussion of the Anticipation and Obviousness Rejections*

The anticipation and obviousness rejections are not believed to be proper inasmuch as the cited reference (i.e., Gilliams) does not disclose nor reasonably suggest the present inventive aqueous dispersions.

The Office, in support of its position, contends that Gilliams discloses an aqueous dispersion containing a silver salt of an aliphatic carboxylic acid and silver halide. (Office Action, page 2). Further, the Office alleges that Gilliams discloses the use of sodium hydroxide to provide an aqueous solution with pH of 8.7, and the formation of silver halide *in-situ* using the conversion of silver behenate. (Office Action, page 2). Citing *In re Thorpe*, 777 F.2d 695, 698 (Fed. Cir. 1985), the Office contends that the patentability of a product claimed in the form of a product-by-process claim does not depend on its method of production (Office Action, page 3). The Office points, in particular, to example 1 of Gilliams, alleging that it discloses the preparation of silver behenate and *in-situ* silver halide by first forming an aqueous solution having a pH of 8.7 using sodium hydroxide to control the pH thereof and then using a conversion process by adding potassium bromide drop wise giving rise to an aqueous solution containing *in-situ* silver halide and a light-insensitive silver salt of an organic carboxylic acid. (Office Action, pages 2-3). As well, Example 2 is cited as disclosing the formation of silver halide *in-situ* using the conversion of silver behenate. (Office Action, page 2).

The Office therefore concludes that the aqueous solution of Gilliams is identical to that claimed in the present application, including the pH, except that the composition of the claimed invention contains *ex-situ* silver halide whereas Gilliams is limited to a solution with *in-situ* silver halide. (Office Action, pages 2-3) The Office is incorrect. The Office is directed to COMPARATIVE EXAMPLES 1 and 2, as well as INVENTIVE EXAMPLES 1 to 6 of the present application at pages 18-19. COMPARATIVE EXAMPLES 1 and 2 describe the product obtained by the method of the prior art, e.g., Gilliams. As noted on page 18 of the application, the pH of the compositions of COMPARATIVE EXAMPLES 1 and 2 is only modulated *before* the formation of the silver salt of an organic carboxylic acid, e.g., silver behenate, which mirrors the methodology of Gilliams. In fact, the pH of 8.7 is not so much the result of the modulation of pH by the addition of sodium hydroxide, as it is the result of the mixing of sodium hydroxide, a strong alkali, and behenic acid, a very weak acid.

Turning to the data described in Table 2 on page 19 of the application, the pH of the silver behenate dispersion obtained by the methodology of the prior art is around 5.0 after silver nitrate is added (the pH decreases strongly as the silver behenate goes into dispersion), and gives relatively high UAg values, (*see, e.g.*, Table 2, COMPARATIVE EXAMPLES 1 and 2, Application, page 19). The prior art silver behenate dispersion has a low pH because the methods of the prior art (i.e., Gilliams) only describe the modulation of the pH of the aqueous dispersion *before* silver behenate is produced. Therefore, the Office's contention that the claimed composition and the composition of Gilliams have the same pH (Office Action, page 3) is not factually correct.

As seen in INVENTIVE EXAMPLES 1 to 6, the methods of the present invention results in an aqueous dispersion with a pH substantially higher than that of prior art aqueous dispersions. The methodology of claim 1 employs the modulation of pH of the solution *after* the formation of silver behenate, contrary to the teachings of Gilliams. Table 2 on page 19 of the application sets forth data in which aqueous dispersions with comparatively high pH obtained by the methods of present invention have UAg values substantially lower relative to those of the prior art. An increase in UAg is undesirable, because high UAg values result in an increased fogging level in silver halide photographic materials. (Application, page 10). In view of the difference in the pH of the aqueous dispersions as well as the improvement in UAg values of the compositions of the present invention, the compositions taught by Gilliams

cannot be said to be the same as those claimed in the present invention. *At a minimum*, the compositions cannot be said to be identical, in view of the difference in the pH of the compositions of the prior art and those of the present invention. In view of the foregoing, the claimed aqueous dispersions of the present invention cannot be said to be anticipated by Gilliams.

The differences between the claimed compositions and the prior art compositions are also demonstrated with respect to photothermographic recording materials produced by INVENTION EXAMPLES 1 to 6, as compared to COMPARATIVE EXAMPLES 1 and 2. As seen in Table 3 on page 22 of the application, the photothermographic recording materials of the present invention have an improved stability in the dark of their photosensitivity and  $D_{min}$  upon exposure and thermal development relative to those produced by prior art methods. These differences constitute *prima facie* evidence that the rejection of claims directed to photothermographic recording materials produced by the methods of the claimed invention under 35 U.S.C. § 102 (b) over Gilliams is improper.

The different UAg and pH values of the compositions obtained by the methods of the present invention are *prima facie* evidence that the claimed compositions are, in fact, non-obvious compositions in view of those disclosed in Gilliams. *Ex parte Gray*, 10 U.S.P.Q.2d (BNA) 1922 (Bd. Pat. App. & Inter. 1989) (stating that dispositive issue in determining obviousness of a known protein produced by genetic engineering techniques is whether the protein produced by genetic engineering techniques exhibited any unexpected properties compared with the protein disclosed by the prior art). The Office correctly points out that "evidence of secondary considerations ... is irrelevant to 35 U.S.C. § 102 rejections and thus cannot overcome a rejection so based." *In re Wiggins*, 488 F.2d 538, 543, 179 U.S.P.Q. 421, 425 (CCPA 1973). As such, the limitation on evidence of secondary considerations of *In re Wiggins* is inapplicable here. As already discussed, a rejection under 35 U.S.C. § 102 is inappropriate in this case, and the remaining basis for the rejection of these claims is 35 U.S.C. § 103. In contrast to a rejection under 35 U.S.C. § 102, evidence of secondary considerations *is* probative as to patentability in overcoming a rejection under 35 U.S.C. § 103. See *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459, 467 (1966). As previously noted in the Response to Office Action filed December 9, 2002, and as described, *supra*, the properties of the claimed aqueous dispersions were unexpected in view of the

In re Appln. of Uytterhoeven et al.  
Application No. 09/934,806

teachings of the prior art. In view of the unexpected results as described above, and in the Response to Office Action filed December 9, 2002, the claimed compositions are not obvious variants of the compositions disclosed in Gilliams.

Therefore, as discussed above, the rejection of claims 5-6 and 14 under 35 U.S.C. § 102(b), or, in the alternative, under 35 U.S.C. § 103 (a), and the rejection of claims 8, 10, 11 and 15 under 35 U.S.C. § 102 (b), all over Gilliams are improper, as Gilliams cannot be said to teach or reasonably suggest the claimed invention.

Even if the use of a basic solution, such as ammonia, to regulate pH has been common on the art, as contended by the Office, the failure of Gilliams to teach, or reasonably suggest the regulation of the pH of the silver behenate emulsion after synthesis, and further in view of the difference in properties of the compositions of the claimed invention as exemplified by INVENTION EXAMPLES 1 to 6 as compared to COMPARATIVE EXAMPLES 1 and 2, the rejections of claims 9, 12 and 13 under 35 U.S.C. § 103 (a) over Gilliams is inappropriate.

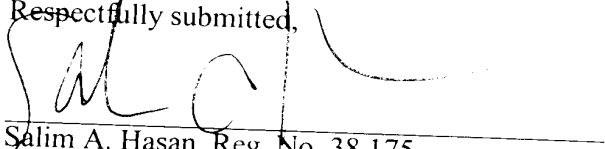
In view of the foregoing, Gilliams cannot be said to teach or fairly suggest the claimed invention. Accordingly, the obviousness rejection should be withdrawn and the application allowed.

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*Conclusion*

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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CERTIFICATE OF MAILING

I hereby certify that this AMENDMENT (along with any documents referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Date: \_\_\_\_\_

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*Magnum Schutte*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Uytterhoeven et al.

Application No. 09/934,806

Filed: August 22, 2001

Art Unit: 1752

Examiner: T. Chea

For: AQUEOUS DISPERSION COMPRISING  
PHOTOSENSITIVE SILVER HALIDE AND  
A SUBSTANTIALLY LIGHT-INSENSITIVE  
SILVER SALT OF AN ORGANIC  
CARBOXYLIC ACID

**AMENDMENTS TO CLAIMS  
MADE IN RESPONSE TO OFFICE ACTION DATED FEBRUARY 26, 2003**

*Amendments to existing claims:*

1. (Amended) A preparation process for a first aqueous dispersion comprising an ex-situ photosensitive silver halide and a substantially light-insensitive silver salt of an organic carboxylic acid, comprising the steps of: separately preparing a second aqueous dispersion comprising said ex-situ photosensitive silver halide and a third aqueous dispersion comprising said substantially light-insensitive silver salt of an organic carboxylic acid; and mixing said second aqueous dispersion with said third aqueous dispersion to produce a mixture thereof, [characterized in that] wherein said first aqueous dispersion thereby produced is substantially free of a water-soluble metal or ammonium salt of an aliphatic carboxylic acid with greater than 12 carbon atoms and said process further comprises a step selected from the group consisting of: increasing the pH of said second aqueous dispersion to a value of at least 8.0 prior to mixing with said third aqueous dispersion; increasing the pH of said third aqueous dispersion to a value of at least 8.0 prior to mixing with said second aqueous dispersion; and increasing the pH of said mixture to a value of at least 8.0.



8. (Amended) A preparation process for a fourth aqueous dispersion comprising a second in-situ photosensitive silver halide and a substantially light-insensitive silver salt of an organic carboxylic acid, comprising the steps of: (i) providing said third aqueous dispersion of claim 1 and (ii) partially converting said substantially light-insensitive silver salt of an organic carboxylic acid in said third aqueous dispersion with a non-fluoro halide ion source into said second in-situ photosensitive silver halide thereby producing said fourth aqueous dispersion; [characterized in that] wherein said fourth aqueous dispersion thereby produced is substantially free of a water-soluble metal or ammonium salt of an aliphatic carboxylic acid with greater than 12 carbon atoms and said process further comprises a step selected from the group consisting of: increasing the pH of said third aqueous dispersion to a value of at least 8.0 prior to step (ii); increasing the pH of the third aqueous dispersion to a value of at least 8.0 during step (ii); and increasing the pH of said aqueous dispersion resulting from step (ii) to a value of at least 8.0.

14. (Amended) A photothermographic recording material comprising a photo-addressable thermally developable element, wherein the photo-addressable thermally developable element comprises a layer produced with a first dispersion, wherein the first aqueous dispersion comprises an ex-situ photosensitive silver halide and a substantially light-insensitive silver salt of an organic carboxylic acid, and wherein the first aqueous dispersion is obtained by a preparation process [according to claim 1.] for a first aqueous dispersion comprising the steps of: separately preparing a second aqueous dispersion comprising said ex-situ photosensitive silver halide and a third aqueous dispersion comprising said substantially light-insensitive silver salt of an organic carboxylic acid; and mixing said second aqueous dispersion with said third aqueous dispersion to produce a mixture thereof, wherein said first aqueous dispersion thereby produced is substantially free of a water-soluble metal or ammonium salt of an aliphatic carboxylic acid with greater than 12 carbon atoms and said process further comprises a step selected from the group consisting of: increasing the pH of said second aqueous dispersion to a value of at least 8.0 prior to mixing with said third aqueous dispersion; increasing the pH of said third aqueous dispersion to a value of at least 8.0 prior to mixing with said second aqueous dispersion; and increasing the pH of said mixture to a value of at least 8.0.

15(Amended). A photothermographic recording material comprising a photo-addressable thermally developable element, wherein the photo-addressable thermally developable element comprises a layer produced with a fourth aqueous dispersion, wherein said fourth aqueous dispersion compris[ing]es a second in-situ photosensitive silver halide and a substantially light-insensitive silver salt of an organic carboxylic acid and wherein the fourth aqueous dispersion is obtained by a preparation process [according to claim 8.] comprising the steps of: (i) providing said third aqueous dispersion of claim 1 and (ii) partially converting said substantially light-insensitive silver salt of an organic carboxylic acid in said third aqueous dispersion with a non-fluoro halide ion source into said second in-situ photosensitive silver halide thereby producing said fourth aqueous dispersion; wherein said fourth aqueous dispersion thereby produced is substantially free of a water-soluble metal or ammonium salt of an aliphatic carboxylic acid with greater than 12 carbon atoms and said process further comprises a step selected from the group consisting of: increasing the pH of said third aqueous dispersion to a value of at least 8.0 prior to step (ii); increasing the pH of the third aqueous dispersion to a value of at least 8.0 during step (ii); and increasing the pH of said aqueous dispersion resulting from step (ii) to a value of at least 8.0, wherein said process further includes a step of adding a water-soluble silver salt having a solubility in water at 20°C of greater than 0.1 g/L at any stage in said preparation process.

16. (New) A photothermographic recording material comprising a photo-addressable thermally developable element, wherein the photo-addressable thermally developable element comprises a layer produced with a first dispersion, wherein the first aqueous dispersion comprises an ex-situ photosensitive silver halide and a substantially light-insensitive silver salt of an organic carboxylic acid, and wherein the first aqueous dispersion is obtained by a preparation process for a first aqueous dispersion comprising the steps of: separately preparing a second aqueous dispersion comprising said ex-situ photosensitive silver halide and a third aqueous dispersion comprising said substantially light-insensitive silver salt of an organic carboxylic acid; and mixing said second aqueous dispersion with said third aqueous dispersion to produce a mixture thereof, wherein said first

aqueous dispersion thereby produced is substantially free of a water-soluble metal or ammonium salt of an aliphatic carboxylic acid with greater than 12 carbon atoms and said process further comprises a step selected from the group consisting of: increasing the pH of said second aqueous dispersion to a value of at least 8.0 prior to mixing with said third aqueous dispersion; increasing the pH of said third aqueous dispersion to a value of at least 8.0 prior to mixing with said second aqueous dispersion; and increasing the pH of said mixture to a value of at least 8.0, wherein said process further includes a step of adding a water-soluble silver salt having a solubility in water at 20°C of greater than 0.1 g/L at any stage in said preparation process.

17. (New) Preparation process according to claim 1, wherein said process further includes a step of adding a water-soluble silver salt having a solubility in water at 20°C of greater than 0.1 g/L at any stage in said preparation process.

18. (New) Preparation process according to claim 8, wherein said process further includes a step of adding a water-soluble silver salt having a solubility in water at 20°C of greater than 0.1 g/L at any stage in said preparation process.